

Amendments to the Claim:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Construct for transdermal delivery of at least one immunogen to an individual comprising:

a) said at least one immunogen, or at least one expressible nucleic acid encoding said immunogen;

b) an occlusion vehicle and

c) an immunogen delivery system

wherein the immunogen delivery system is a complex comprising:

i) at least one first cationic sterol ~~and/or at least one second sterol,~~

~~wherein the at least one second sterol is capable of contacting a genetic determinant by means of an interaction selected from an electrostatic interaction and a hydrophobic interaction, and wherein the at least one first sterol and/or the at least one second sterol is capable of forming a complex with at least one first saponin and/or at least one second saponin, and~~

ii) at least one first saponin ~~and/or at least one second saponin,~~

wherein, if the construct comprises said nucleic acid, said cationic sterol or said saponin interacts electrostatically or hydrophobically with said nucleic acid,

~~wherein the at least one second saponin is capable of contacting~~

~~a genetic determinant by means of an interaction selected from an electrostatic interaction and a hydrophobic interaction, and wherein the at least one first said saponin and/or the at least one second saponin is capable of forming a complex with said at least one first cationic sterol and/or at least one second sterol, and optionally~~

~~iii) at least one contacting group for contacting a genetic determinant by means of an interaction selected from an electrostatic interaction and a hydrophobic interaction,~~

~~with the proviso that the at least one contacting group is present when no second sterol is present in the complex and further optionally~~

~~iv) at least one lipophilic moiety.~~

2. (Original) Construct according to claim 1, wherein the occlusion vehicle is a pressure sensitive adhesive.

3. (Cancelled)

4. (Currently Amended) Construct according to claim 1, wherein ~~the transdermal delivery includes~~ said construct is adapted for delivery through a skin surface or through a mucous membrane tissue.

5. (Previously presented) Construct according to claim 1, wherein the occlusion vehicle is a absorbing pressure sensitive adhesive.

6. (Previously presented) Construct according to claim 1, wherein the occlusion vehicle is a hydrocolloid adhesive.

7. (Previously presented) Construct according to claim 1, wherein the occlusion vehicle is a hydrogel adhesive.

8. (Previously presented) Construct according to claim 1, wherein the occlusion vehicle is a cross-linked hydrogel adhesive.

9. (Currently amended) Construct according to claim 1, wherein the immunogen and the immunogen delivery system ~~is~~ are distributed ~~preferably~~ homogenously in the occlusion vehicle.

10. (Currently amended) Construct according to claim 1, wherein the immunogen and the immunogen delivery system ~~is~~ are distributed on the surface of the occlusion vehicle.

11. (Withdrawn - currently amended) Construct according to claim 1, wherein the occlusion vehicle is a non-adherent occlusion vehicle, and said construct further comprising a secondary adhesive, being separated from the vehicle, for skin fixation.

12. (Withdrawn) Construct according to claim 11, wherein the occlusion vehicle is dried or lyophilised and contains a carrier comprising a hydrophilic polymer substance or a grease like composition.

13. (Currently amended) Construct according to claim 1, wherein the occlusion vehicle or the secondary adhesive is a covering, ~~such as a pad, a patch, a dressing or the like.~~

14. (Withdrawn - currently amended) Construct according to claim 12 further comprising a reservoir ~~of water or other appropriate containing a~~ solvent/diluent.

15. (Withdrawn) Construct according to claim 14, wherein the water reservoir can be broken and the water or solvent/diluent can be absorbed in the occlusion vehicle.

16. (Currently amended) Construct according to claim 1 further comprising a delivery rate controlling membrane.

17. (Currently amended) Construct according to claim 1, wherein the immunogen and/or the immunogen delivery system ~~is~~ are separated from each other.

18. (Previously presented) Construct according to claim 1 further comprising an enhancer for transdermal drug delivery.

19. (Cancelled)

20. (Currently amended) Construct according to claim ~~19~~ 1, wherein ~~said one or more antigens are~~ at least one immunogen is derived from a microorganism, ~~preferably a pathogenic microorganism, such as a virus, a bacteria, a parasite and/or a fungus, or from a non-microbial organism, e.g. from an animal, such as a vertebrate.~~

21. (Currently amended) Construct according to claim ~~19~~ 1, wherein ~~the~~ at least one immunogen ~~and/or antigen are~~ is derived from a virus.

22. (Cancelled)

23. (Currently amended) Construct according to claim ~~19~~ 1, wherein the at least one immunogen is ~~selected in such a way that the induced immunological response confers protection in said individual against a pathogenic microorganism which said antigen or antigens are part of~~ an immunogen which, when administered in an effective amount to a subject, elicits an immune response which is protective against the pathogenic microorganism with which that immunogen, or an immunologically cross-reactive antigen, is associated.

24. (Cancelled)

25. (Currently amended) Construct according to claim ~~19~~ 20,

wherein the at least one immunogen is selected in such a way that the induced immunological response is directed against a pathogenic component produced by said pathogenic microorganism during infection of said individual, ~~e.g. bacterial toxins, such as tetanus toxin.~~

26. (Currently amended) Construct according to claim 1, wherein the immunogen ~~and/or antigen comprises or consist of~~

i) one or more identical or different polypeptides and/or peptides, ~~which polypeptides and/or peptides optionally comprise posttranslational modifications,~~

ii) one or more identical or different lipopeptides, ~~such as polypeptides and/or peptides chemically linked to a lipid group,~~

iii) one or more identical or different nucleic acid sequence or sequences, which may encode polypeptides and/or peptides, or

iv) one or more identical or different polysaccharides and/or oligosaccharides,

~~or combinations thereof, and wherein the immunogen and/or antigen may further be processed into fragments.~~

27. (Previously presented) Construct according to claim 1, wherein the immunogen and the immunogen delivery system is comprised within a vaccine formulation.

28. (Cancelled).

29. (Withdrawn) Process for the preparation of a construct according to claim 1, comprising the steps of introducing the

immunogen and the immunogen delivery system, which are optionally comprised within a vaccine formulation, into the matrix of the occlusion vehicle or on its surface by dispersion or soaking in a solution of the vehicle or by applying to its surface, and optionally sterilising and/or drying and/or seal packaging the construct.

30. (Withdrawn) Process according to claim 29 further comprising the step of drying or lyophilisation or the immunogen and the immunogen delivery system before introducing into the vehicle.

31. (Withdrawn) Process according to claim 29 further comprising the step of adding one or more enhancers for transdermal drug delivery and/or one or more plasticizers.

32. (Previously presented) Construct according to claim 1, having one or more compartments.

33. (Currently amended) Construct according to claim 32 having at least two compartments, wherein a first compartment comprises a lyophilised pad comprising the immunogen and the immunogen delivery system and a second compartment ~~comprises water or other appropriate~~ contains a solvent/diluent.

34. (Previously presented) Construct according to claim 1 comprising at least two separate components.

35. (Withdrawn - Currently amended) Method for generating an immunological response in an individual wherein said individual is treated transdermally with a construct according to claim 1.

36. (Withdrawn - Currently amended) Method for treating or preventing a condition of illness in an individual, ~~e.g. a disease caused by infection of said individual by a pathogenic microorganism,~~ wherein said individual is treated transdermally

with a construct according to claim 1.

37. (Withdrawn - Currently amended) Method for vaccination of an individual wherein said individual is treated transdermally with a construct according to claim 1.

38. (New) The construct of claim 13 wherein the covering is a pad, patch or dressing.

39. (New) The construct of claim 18 wherein the enhancer is selected from the group consisting of alcohols, amines, phospholipids, fatty acids, surfactants and polyols.

40. (New) The construct of claim 20 wherein the microorganism is a bacterium selected from the group consisting of *Achromobacter xylosoxidans*, *Acinetobacter calcoaceticus*, *Acinetobacter anitratus*, *Acinetobacter haemolyticus*, *Acinetobacter alcaligenes*, *Acinetobacter Iwoffii*, *Actinomyces israelii*, *Aeromonas hydrophilia*, *Aeromonas faecalis*, *Aeromonas odorans*, *Aeromonas denitrificans*, *Arizona hinshawii*, *Bacillus anthracis*, *Bacillus cereus*, *Bacteroides fragilis*, *Bacteroides melaninogenicus*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Borrelia recurrentis*, *Brucella abortus*, *Brucella suis*, *Brucella melitensis*, *Brucella canis*, *Calymmatobacterium granulomatis*, *Campylobacter fetus* ssp. *intestinalis*, *Campylobacter fetus* ssp. *jejuni*, *Chlamydia psittaci*, *Chlamydia trachomatis*, *Chromobacterium violaceum*, *Citrobacter freundii*, *Citrobacter diversus*, *Clostridium botulinum*, *Clostridium perfringens*, *Clostridium difficile*, *Clostridium tetani*, *Corynebacterium diphtheriae*, *Corynebacterium ulcerans*, *Corynebacterium haemolyticum*, *Corynebacterium pseudotuberculosis*, *Coxiella burnetii*, *Edwardsiella tarda*, *Eikenella corrodens*, *Enterobacter cloacae*, *Enterobacter aerogenes*, *C. hafniae* (also named *Hafnia alvei*) *Enterobacter agglomerans*, *Erysipelothrix rhusiopathiae*, *Escherichia coli*, *Flavobacterium meningosepticum*, *Francisella*

tularensis, *Fusobacterium nucleatum*, *Gardnerella vaginalis*, *Haemophilus ducreyi*, *Haemophilus influenzae*, *Helicobacter* species, *Klebsiella pneumoniae*, *Klebsiella ozaenae*, *Klebsiella rhinoscleromatis*, *Legionella* species, *Leptospira interrogans*, *Listeria monocytogenes*, *Moraxella lacunata*, *Moraxella osloerisis*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Nocardia brasiliensis*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Peptococcus magnus*, *Plesiomonas shigelloides*, *Pneumococci*, *Proteus mirabilis*, *Proteus vulgaris*, *Proteus rettgeri*, *Proteus morganii* (also named *Providencia rettgeri* and *Morganella morganii* respectively), *Providencia alcalifaciens*, *Providencia stuartii*, *Providencia rettgeri* (also named *Proteus rettgeri*), *Pseudomonas aeruginosa*, *Pseudomonas mallei*, *Pseudomonas pseudomallei*, *Rickettsia*, *Rochalimaia henselae*, *Salmonella enteridis*, *Salmonella typhi*, *Salmonella derby*, *Serratia marcescens*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella boydii*, *Shigella sonnei*, *Spirillum minor*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus saprophyticus*, *Streptobacillus moniliformis*, *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus durans*, *Streptococcus agalactiae*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema carateum*, *Treponema pallidum*, *Treponema pertenue*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Yersinia enterocolitica*, and *Yersinia pestis*,

or a parasite selected from the group consisting of *Plasmodium* species, Schistosomes, Trypanosomes, Leishmania, Filarial nematodes, Trichomoniasis, Sarcosporidiasis, Taenia Leishmania, *Toxoplasma gondii*, *Trichinella spiralis*, and *Eimeria* species,

or a fungus selected from the group consisting of *Cryptococcus neoformans*, *Candida albicans*, *Apergillus fumigatus* and fungi causing Coccidioidomycosis.

41. (New) The construct of claim 21 wherein the virus is



selected from the group consisting of Adeno-associated virus, Adenovirus, Avian infectious bronchitis virus, Baculovirus, Chicken pox, Monkey Pox, Avi Pox, Corona virus, Cytomegalovirus, Distemper, Enterovirus, Epstein Barr virus, Feline leukemia virus, Flavivirus, Foot and mouth disease virus, Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis E, Herpes species, Herpes simplex, Influenza virus, HIV-1, HIV-2, HTLV 1, Influenza A and B, Kunjin virus, Lassa fever virus, LCMV (lymphocytic choriomeningitis virus), lentivirus, Measles, Mengo virus, Morbillivirus, Myxovirus, Papilloma virus, Parovirus, Parainfluenza virus, Paramyxovirus, Parvovirus, Poko virus, Polio virus, Polyoma tumour virus, pseudorabies, Rabies virus, Reovirus, Respiratory syncytial virus, retrovirus, rhinovirus, Rinderpest, Rotavirus, Semliki forest virus, Sendai virus, Simian Virus 40, Sindbis virus, SV5, Tick borne encephalitis virus, Togavirus (rubella, yellow fever, dengue fever), Vaccinia virus, Venezuelan equine encephalomyelitis and Vesicular stomatitis virus.

42. (New) The construct of claim 36 wherein the condition is a disease caused by infection of said individual with a pathogenic microorganism.

43. (New) The construct of claim 1 which comprises at least one immunogen.

44. (New) The construct of claim 43 wherein the immunogen comprises a peptide.

45. (New) The construct of claim 44 wherein the immunogen comprises a lipopeptide.

46. (New) The construct of claim 1 which comprises an expressible nucleic acid encoding a peptide immunogen, which nucleic acid, after being delivered to said individual, is expressed, by cells of said individual, thereby delivering said peptide immunogen to said individual.

47. (New) The construct of claim 46, wherein said nucleic acid encodes an immunogen capable of eliciting a protective immune response against a pathogenic microorganism.

48. (New) The construct of claim 1 wherein at least one

cationic sterol is DC-cholesterol.

49. (New) The construct of claim 1 which further comprises at least one anionic or non-ionic sterol.

50. (New) The construct of claim 49 which comprises, as a non-ionic sterol, cholesterol.

51. (New) The construct of claim 48 which further comprises cholesterol.

52. (New) The construct of claim 51 which further comprises phosphatidylcholine.

53. (New) The construct of claim 1 which comprises Quil A.

54. (New) The construct of claim 1 wherein at least one immunogen is tetanus toxoid.

55. (New) The construct of claim 1 in which at least one immunogen is Hepatis B surface antigen.

56. (New) The construct of claim 1, in which the complex is in the form of microparticles with an average diameter of not more than 50 nm.

57. (New) The construct of claim 56, wherein the average diameter of the microparticles is at least 5 nm.

58. (New) The construct of claim 1, in which the complex is in the form of rigid microparticles.

59. (New) The construct of claim 58, wherein the microparticles have a case-like structure.

60. (New) The construct of claim 1 wherein the immunogen comprises one or more saccharide units.

61. (New) The construct of claim 1 wherein the enhancer is low MW-polyethylene glycol, propylene glycol, lauric acid, oleic acid, methyl laurate, ethyl oleate, N-methyl-pyrrolidone, dioctyl adipate or glycerol.